

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
SMART & BIGGAR
1501 - 10060 Jasper Avenue
Scotia Place Tower 2
EDMONTON, Alberta
Canada, T5J 3R8

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing (day/month/year)	29 March 2005 (29-03-2005)
-------------------------------------	----------------------------

Applicant's or agent's file reference
58001-58

FOR FURTHER ACTION
See paragraph 2 below

International application No.

PCT/CA2005/000009

International filing date (day/month/year)

06 January 2005 (06-01-2005)

Priority date (day/month/year)

09 January 2004 (09-01-2004)

International Patent Classification (IPC) or both national classification and IPC
IPC[7] E21B 43/22, C09K 7/02

Applicant
ALBERTA RESEARCH COUNCIL INC. ET AL

1. This opinion contains indications relating to the following items :

- | | | |
|---|--------------|---|
| <input checked="" type="checkbox"/> [X] | Box No. I | Basis of the opinion |
| <input type="checkbox"/> [] | Box No. II | Priority |
| <input type="checkbox"/> [] | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> [] | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> [X] | Box No. V | Reasoned statement under Rule 43bis.1(a)(I) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement. |
| <input type="checkbox"/> [] | Box No. VI | Certain documents cited |
| <input type="checkbox"/> [] | Box No. VII | Certain defects in the international application |
| <input checked="" type="checkbox"/> [X] | Box No. VIII | Certain observations on the international application |

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/CA
Canadian Intellectual Property Office
Place du Portage I, C114 - 1st Floor, Box PCT
50 Victoria Street
Gatineau, Quebec K1A 0C9

Facsimile No: 001(819)953-2476

Authorized officer

Christian Opris (819) 934-4264

176

for PCT

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language which it was filed, unless otherwise indicated under this item.

[] This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of :
 - a. type of material
 - [] a sequence listing
 - [] table(s) related to the sequence listing
 - b. format of material
 - [] in written format
 - [] in computer readable form
 - c. time of filing/furnishing
 - [] contained in the international application as filed.
 - [] filed together with the international application in computer readable form.
 - [] furnished subsequently to this Authority for the purposes of search.
3. [] In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statement that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments :

Box No. V Reasoned statement under Rule 43bis.1(a)(I) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1-20</u>	YES
	Claims	<u>NONE</u>	NO
Inventive step (IS)	Claims	<u>1-20</u>	YES
	Claims	<u>NONE</u>	NO
Industrial applicability (IA)	Claims	<u>1-20</u>	YES
	Claims	<u>NONE</u>	NO

2. Citations and explanations :

The invention relates to a method of blocking or inhibiting water influx into a wellbore such that of a gas producing formation or gas reservoir. The problem it attempts to solve is placing a chemical blocking agent in a desired position down the wellbore and in the formation. The following documents have been found to represent the state of the art:

D1: CA 2411771 A1 (HIRASAKI, G. et al.) 15 May 2003 (15-05-2003)
D2: US 6516885 B1 (MUNDAY, K.) 11 February 2003 (11-02-2003)
D3: US 6431280 B2 (BAYLISS, G. et al.) 13 August 2002 (13-08-2002)
D4: US 4694906 A (HUTCHINS, R. et al.) 22 September 1987 (22-09-1987)

D1 discloses methods for reducing the water permeability of a water producing zone in a subterranean formation comprising the step of introducing a polymeric surfactant and an inert gas into the water producing zone by way of a wellbore to form a water permeability reducing foam.

D2 discloses a method of reducing water flow from a hydrocarbon production well comprising the steps of injecting a first chemical composition effective as a relative permeability modifier polymer into the hydrocarbon and water zones of a reservoir, injecting a second chemical composition which forms a flow blocking polymer composition into the hydrocarbon and water zone, shutting-in the well to allow the reaction period required for the first chemical composition to form the permeability modifier polymer and back producing the polymer compositions from the hydrocarbon zones to provide a path for the hydrocarbons while allowing the flow-blocking polymer composition to form the water shut-off in the well.

D3 discloses a method for the placement of blocking gels or polymers at specific depths of penetration to reduce water influx into oil or gas producing wells comprising injecting interactive chemicals used to form gels and polymers independently and sequentially into a well in such a manner that the chemicals only come into contact with each other at desired depths of penetration in the formation.

D4, cited in the application, discloses a method for reducing the permeability zones of a subterranean reservoir comprising injecting through a well an aqueous solution, a foam emplacement gas and allowing the foam to form in the higher permeability zones.

The invention claims a method of reducing water influx into a wellbore comprising the steps of first introducing into the wellbore a gelant and secondly a foam to displace the gelant out of the wellbore and into the formation. Neither the documents mentioned herein nor any combination thereof reveal a method of reducing water influx into a wellbore as claimed.

Therefore, claims 1-20 satisfy PCT Articles 33(2) regarding novelty, 33(3) regarding inventive step and 33(4) regarding industrial applicability.

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made :

Contrary to PCT Rule 11.13(a), Figure 1 is so dark that it is impossible to see what reference characters 20, 24, 26 and 28 point to.

The reference characters used in the drawings contain circles, contrary to PCT Rule 11.13(e).